

Atp6v1f Cas9-KO Strategy

Designer:

Qiong Zhou

Project Overview

Project Name

Atp6v1f

Project type

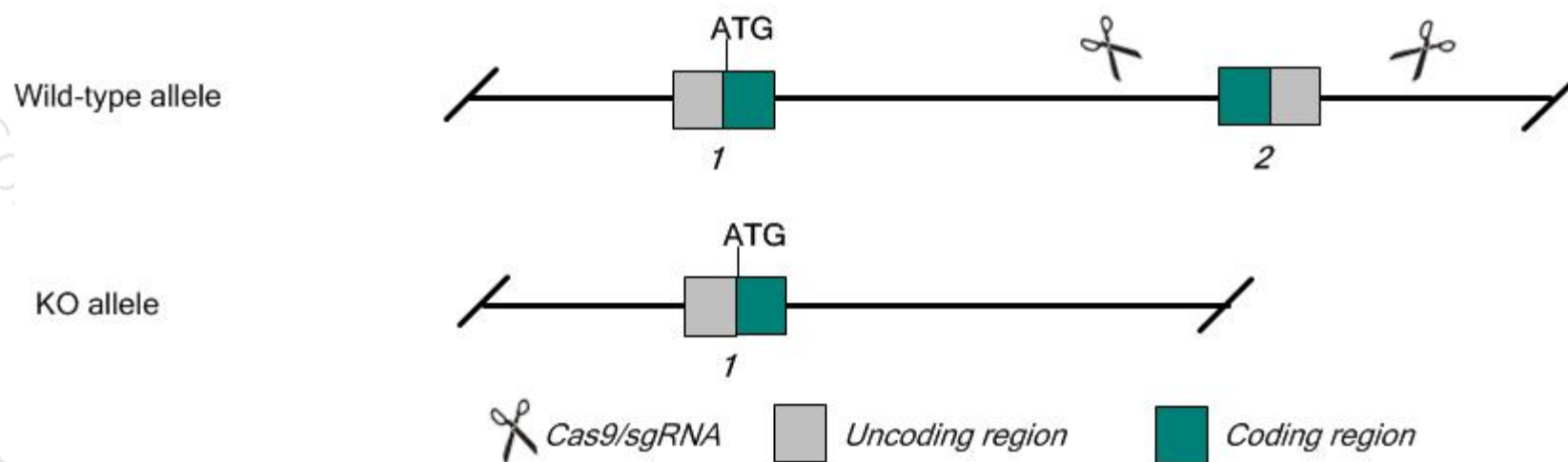
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp6v1f* gene. The schematic diagram is as follows:



- The *Atp6v1f* gene has 3 transcripts. According to the structure of *Atp6v1f* gene, exon2 of *Atp6v1f*-201 (ENSMUST00000004396.12) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atp6v1f* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating Positive F0 generation mice with C57BL/6J mice.

- The *Atp6v1f* gene is located on the Chr6. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of gene transcription and translation processes, all risks cannot be predicted under existing information.

Atp6v1f ATPase, H⁺ transporting, lysosomal V1 subunit F [*Mus musculus* (house mouse)]




Gene ID: 66144, updated on 9-Jun-2019

Summary

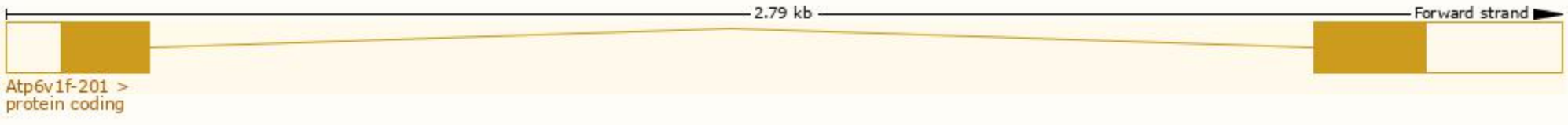
Official Symbol	Atp6v1f provided by MGI
Official Full Name	ATPase, H ⁺ transporting, lysosomal V1 subunit F provided by MGI
Primary source	MGI:MGI:1913394
See related	Ensembl:ENSMUSG000000004285
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110004G16Rik
Expression	Ubiquitous expression in kidney adult (RPKM 258.8), testis adult (RPKM 147.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

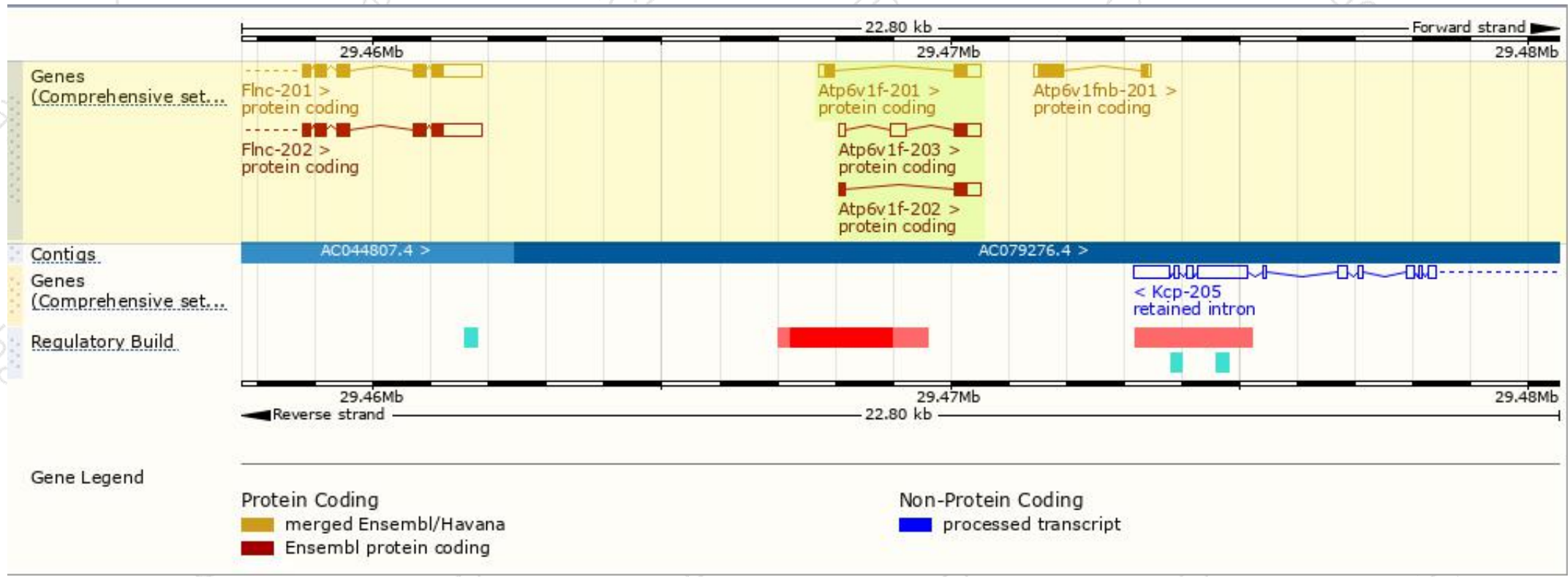
The gene has 3 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp6v1f-201	ENSMUST00000004396.12	703	119aa	 Protein coding	CCDS19960	Q9D1K2	TSL:1 GENCODE basic APPRIS P1
Atp6v1f-203	ENSMUST00000149646.2	806	71aa	 Protein coding	-	A0A0N4SVE1	TSL:5 GENCODE basic
Atp6v1f-202	ENSMUST00000143101.3	546	100aa	 Protein coding	-	F7B2B4	CDS 5' incomplete TSL:3

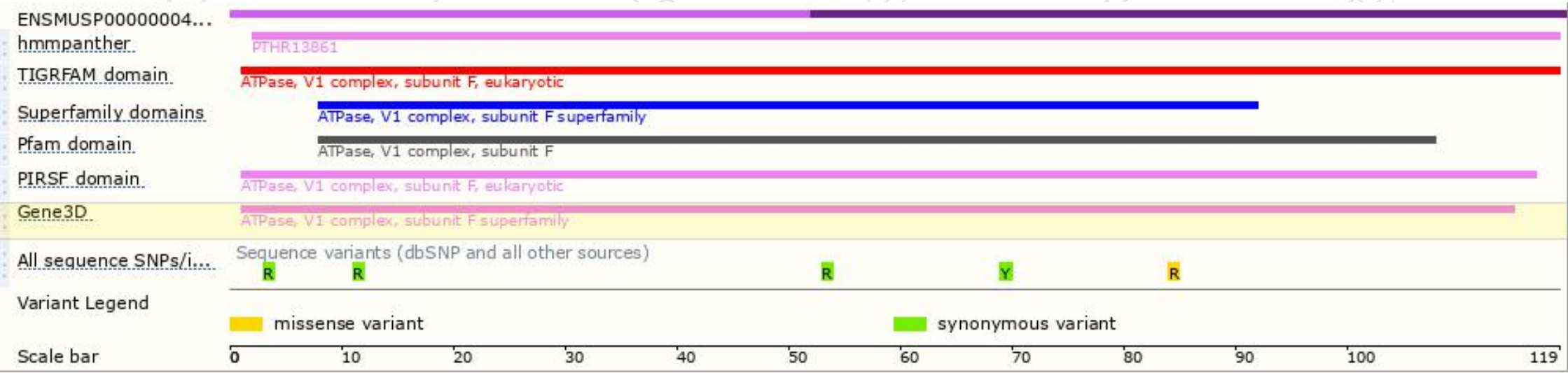
The strategy is based on the design of *Atp6v1f-201* transcript, The transcription is shown below



Genomic location (Ensembl)



Protein domain (Ensembl)



If you have any questions, you are welcome to inquire.

Tel: 025-5864 1534



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